BioSystems, 25 (1991) 295–296
Elsevier Scientific Publishers Ireland Ltd.

Contents

Volume 25

Nos. 1,2

Special Issue

Papers presented at the 8TH BIENNIAL CONFERENCE OF THE INTERNATIONAL SOCIETY FOR EVOLUTIONARY PROTISTOLOGY

Cytoskeletal origins in sulfur-metabolizing archaebacteria
D.G. Searcy and W.G. Hixon (Amherst, MA) 1

A model for diurnal patterns of carbon fixation in a Precambrian microbial mat based on a modern analog
L.J. Rothschild (Moffett Field, CA) 13

Archamoebae: the ancestral eukaryotes?
T. Cavalier-Smith (Vancouver, Canada) 25

Paleozoic Foraminifera
C.A. Ross and J.R.P. Ross (Bellingham, WA) 39

Microtubular spindle and centrosome structures during the cell cycle in a dinoflagellate *Crypthecodinium cohnii* B.: an immunocytochemical study
E. Perret, M. Albert, N. Bordes, M. Bornens and M.-O. Soyer-Gobillard (Banyuls sur mer and Gif sur Yvette, France) 53

On the evolution of the karyorelict ciliate life cycle: heterophasic ciliates and the origin of ciliate binary fission
E. Orias (Santa Barbara, CA) 67

The troublesome parasites — molecular and morphological evidence that Apicomplexa belong to the dinoflagellate-ciliate clade
J. Wolters (Kiel, Germany) 75

Phylogeny of the colonial green flagellates: a study of 18S and 26S rRNA sequence data
M.A. Buchheim and R.L. Chapman (Baton-Rouge, LA) 85

Cladistic methods and chromophyte phylogeny
D.M. Williams (London, U.K.) 101

A proposed phylogeny of the flagellated protostelids
F.W. Spiegel (Fayetteville, AR) 113

Fossils as keys to evolution in fungi
M. Sherwood-Pike (Eugene, OR) 121

No. 3

MOLECULAR SYSTEMS

Surfactant micelles containing protoporphyrin IX as models of primitive photocatalytic systems: a spectral study
A.A. Sivash, Z. Masinovský and G.I. Lozovaya (Kiev, USSR and Prague, Czechoslovakia) 131

MODEL SYSTEMS

Homochirality and stereospecific activity: evolutionary aspects
V.V. Avetisov and V.I. Goldanskii (Moscow, USSR) 141

Time reverse automata patterns generated by Spencer-Brown's modulator: invertibility based on autopoiesis
Y. Gunji and T. Nakamura (Kobe, Japan) 151

Generalized Stein's model for anatomically complex neurons
M. Musila and P. Lánský (Prague, Czechoslovakia) 179

Kinetics of the dual-action mechanism of narcotic substances: conditions for conservative functioning of enzyme-receptor systems
A.D. Ilyina, S.V. Zaitsev and S.D. Varfolomeyev (Moscow, USSR) 193

SYMBIOSIS

Elevated levels of stress proteins associated with bacterial symbiosis in *Amoeba proteus* and soybean root nodule cells
E.Y. Choi, G.S. Ahn and K.W. Jeon (Knoxville, TN) 205

No. 4

LEARNING AND MEMORY

Capacity of making choices in the brain and its quantitative evaluation: an application to comprehension of incomplete sentences and semantic commitments
K. Matsuno and J. Lu (Nagaoka, Japan) 213

Memory, learning and neuromediators
E.M. Izhikevich, A.S. Mikhailov and N.A. Sveshnikov (Stuttgart, Germany and Moscow (USSR) 219

EVOLUTIONARY MODELS

Directionality of evolution at molecular and organismic levels
M.A. Livshits and M.V. Volkenstein (Moscow, USSR) 231

Self-reproducing systems: structure, niche relations and evolution
A.A. Sharov (Morgantown, WV) 237

OTHER MODEL SYSTEMS

Some geometrical considerations on membrane insertion by exocytosis
H. Vits (Minneapolis, MN) 251

Enzymes and theoretical biology: sketch of an informational perspective of the cell
P.C. Marijuán (Barcelona, Spain) 259

A hypothetical model of processes involved in the release of norepinephrine in the adrenergic synapse
E.J. Gorzelańczyk and P. Woźniak (Poznań, Poland)

BOOK REVIEWS 283

ANNOUNCEMENT 287

Subject Index 289
Author Index 293
Contents 295